

REMARKS/ARGUMENTS

Claims 91-142 are pending in the application. Claims 136 and 137 are each amended to correct an inadvertent typographical error. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

In paragraph 2 of the final office action, the Examiner rejected claims 136-138 under 35 U.S.C. 103(a) as being unpatentable over Briffa. In paragraph 3, the Examiner allowed claims 91-135 and 139-142. For the following reasons, the Applicant submits that all of the pending claims are allowable over Briffa.

Claims 136, 137, and 138

Independent claim 136 is directed to apparatus for generating a predistorted signal from an input signal to reduce distortion in an output signal generated by signal handling equipment based on the predistorted signal. The apparatus comprises (i) an extractor adapted to generate an extracted signal from the input signal, (ii) automatic gain control (AGC) circuitry adapted to condition the extracted signal so that the conditioned signal envelope maintains a substantially constant amplitude, (iii) a generator adapted to generate a distortion signal based on the conditioned signal, and (iv) a modulator adapted to modulate the input signal based on the distortion signal to generate the predistorted signal.

As understood in the art, using automatic gain control (AGC) circuitry to condition a particular signal so that the conditioned signal envelope maintains a substantially constant amplitude means that the particular signal is amplified (or attenuated) in a controlled manner such that the amplitude of the envelope of the resulting conditioned signal does not substantially change over time, even if the amplitude of the envelope of the particular signal does change over time.

In the embodiment of the present invention shown in Fig. 3, for example, the AGC circuitry includes variable gain element 310 and amplifier 312, where variable gain element 310 is controlled based on a control signal generated by detecting and integrating the squared extracted input signal and comparing the integrated result to a reference signal Ref in order to keep the amplitude of the conditioned signal envelope substantially constant.

In rejecting claim 136, the Examiner admitted, on page 3, that Briffa "does not directly teach automatic gain control circuit adapted to condition the extracted input signal to maintain a substantially constant amplitude." Yet, on page 2, the Examiner stated that Briffa teaches "*Circuitry* adapted to condition the extracted signal so that the conditioned signal envelope maintains a substantially constant amplitude," citing (i) delay element 42 in Fig. 3, which, according to the Examiner, "conditions the input signal," and (ii) column 6, lines 55-67. The Examiner goes on to argue on page 3 that Briffa teaches circuitry that ensures that "the signal level of the extracted input and output signals are matched."

The Applicant submits that the Examiner has apparently confused two different concepts in rejecting claim 136. According to claim 136, the amplitude of the envelope of the conditioned signal (generated by the AGC circuit) remains substantially constant over time. According to the Examiner, Briffa teaches that the amplitude of the extracted input signal matches the amplitude of the output signal. These are two different concepts.

In particular, in Briffa, the amplitude of the extracted input signal can and will change over time (otherwise, there would be no need for the predistortion processing invention taught in Briffa). If the

Examiner is correct about the teachings in Briffa, as the amplitude of the extracted input signal changes over time, so will the amplitude of the output signal change in a similar manner. There is no teaching, however, in Briffa, that the amplitude of the envelope of the output of delay 42 (i.e., Briffa's conditioned signal, according to the Examiner) remains substantially constant over time.

A delay element, like Briffa's delay 42, simply keeps an applied signal from propagating until after a particular time duration has passed. A delay element should not change the amplitude of the envelope of the applied signal (other than perhaps a slight attenuation). And a delay element certainly does not ensure that the amplitude of the envelope of the resulting delayed signal remains substantially constant over time. In sum, a delay element is not an AGC circuit.

For all these reasons, the Applicant submits that claim 136 is allowable over Briffa. For similar reasons, the Applicant submits that claims 137-138 are also allowable over Briffa.

In view of the foregoing, the Applicant submits that the rejections of claims under Section 103(a) have been overcome.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,



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